

REMARKS/ARGUMENTS

Claims 1-4 and 17-28 are pending in this application. By this Amendment, the Abstract, drawings, specification and claims 1-3 are amended, claims 17-28 are added, and claims 5-16 are canceled without prejudice or disclaimer. Support for the claims can be found throughout the specification, including the original claims and the drawings. Withdrawal of the rejections in view of the above amendments and the following remarks is respectfully requested.

I. Restriction Requirement

Applicants maintain their traversal of the Restriction Requirement set forth in the November 3, 2006 Patent Office Communication. However, merely to expedite prosecution of the application, Applicants have cancelled non-elected claims 5-16 without prejudice or disclaimer to be pursued in a continuation application.

II. Rejection of Claims Under 35 U.S.C. § 102(b)

The Office Action rejects claims 1 and 4 under 35 U.S.C. § 102(b) over U.S. Patent No. 5,394,582 to Moon. The rejection is respectfully traversed.

Independent claim 1 is directed to an apparatus that controls a hot water wash cycle in a washing machine. Independent claim 1 recites a controller that controls a water supply and a heater based on a sensing signal generated by a sensor, wherein the controller turns the heater on when the sensor senses that the heater is submerged, and wherein the water supply continues to supply water to the washing machine after the heater is turned on. Moon neither discloses nor suggests at least such features, or the claimed combination of features.

Moon discloses a safety control system for a washing machine including a wash tank 7 disposed in a tub 1. A heater 2 is provided in a space between a bottom of the tub 1 and a bottom of the tank 7 so as to be exposed to wash water held therein. A thermistor Th₁ and thermostat 36 sense an over heating of the heater 2 when a wash water level falls below the heater 2. A thermistor 6 and thermostat 37 provided on an opposite inner bottom surface of the tub 1 come into contact with the wash water so as to sense a wash water temperature.

A water supply drive portion 28 supplies wash water to the tub 1 under the control of a microcomputer 20. The amount of wash water supplied to the tub 1 is based on a volume of clothes to be washed, but should always rise to a level above the heater 2 to prevent overheating. After a desired fill level has been reached and the water supply drive portion 28 has shut off the water supply to the tub 1, a heater operating portion 29 activates the heater 2 to initiate a heating operation on the wash water (see column 4, lines 21-27 of Moon). The temperature of the wash water is monitored by the thermistor 6 and the thermostat 37, and the heater 2 is turned off when the wash water reaches a desired temperature. The thermistor Th₁ and the thermostat 36 serve as a heater temperature detecting device for the heater 2 so that, that if a water level falls below the heater 2 and causes an increase in temperature of the heater 2, the heater 2 is shut off to avoid an overheating situation.

Moon clearly discloses that the heater 2 is not turned on until after the desired fill level is reached and the water supply drive portion 28 has shut off the supply of wash water to the tub 1. Moon neither discloses nor suggests a controller that turns on the heater when a sensor senses

that the heater is submerged, nor that a water supply continues to supply water to the washing machine after the heater is turned on, as recited in independent claim 1.

Accordingly, it is respectfully submitted that independent claim 1 is not anticipated by Moon, and thus the rejection of independent claim under 35 U.S.C. § 102(b) over Moon should be withdrawn. Dependent claim 4 is allowable at least for the reasons set forth above with respect to independent claim 1, from which it depends, as well as for its added features.

III. Rejection of Claims Under 35 U.S.C. § 102(e)/103(a)

The Office Action rejects claims 1, 2 and 4 under 35 U.S.C. § 102(e) or, in the alternative, under 35 U.S.C. § 103(a), over U.S. Patent No. 6,553,594 to Broker et al. (hereinafter “Broker”). The Office Action also rejects claim 3 under 35 U.S.C. § 103(a) over Broker. These rejections are respectfully traversed.

The features of independent claim 1 are as set forth above. Broker neither discloses nor suggests the features recited in independent claim 1, or the claimed combination of features.

Broker discloses a control system for a washing machine 2 that includes a heater 170 whose operation is regulated by a CPU 180. During normal operation, the heater 170 remains deactivated, regardless of the particular cycle selected, and hot/warm/cold wash water is supplied at whatever temperature is available from an external source. However, if a stain cycle is selected, the heater 170 is activated, regardless of whether cold, warm or hot water is selected to facilitate stain removal. In each stain removal cycle, the heater 170 is operated until a temperature of the water reaches a target temperature, and is then deactivated. A temperature

Serial No. **10/721,894**

Docket No. **K-0562**

Reply to Office Action of January 31, 2007

sensor 172 monitors the temperature of the water during the wash cycle, and reactivates the heater 170 if the water temperature falls 5 degrees below the target.

Broker clearly discloses that the heater 170 and associated temperature sensor 172 is only used when a stain cycle is selected. Broker's disclosure regarding the heater 170 and sensor 172 is focused on the enhanced effect on stain removal capabilities of the washing machine 2 by maintaining an increased wash water temperature. Broker neither discloses nor suggests that the heater 170 is turned on as soon as the heater 170 is fully submerged, nor that the washing machine continues to fill with water after the heater 170 is turned on, as recited in independent claim 1. Further, Broker neither discloses nor suggests that it would be in any way advantageous to operate the heater 170 in this manner. Thus, it is respectfully submitted that it would not have been obvious to modify the heater 170 disclosed by Broker to operate in this manner.

Accordingly, it is respectfully submitted that independent claim 1 is allowable over Broker, and thus the rejection of independent claim 1 under 35 U.S.C. § 102(e) or, in the alternative, under 35 U.S.C. § 103(a) over Broker should be withdrawn. Dependent claims 2-4 are allowable at least for the reasons set forth above with respect to independent claim 1, from which they depend, as well as for their added features.

IV. New Claims 17-28

New claims 17-28 are added to the application. It is respectfully submitted that new claims 17-28 also define over the applied prior art references, and meet the requirements of 35 U.S.C. § 112.

Serial No. 10/721,894

Docket No. K-0562

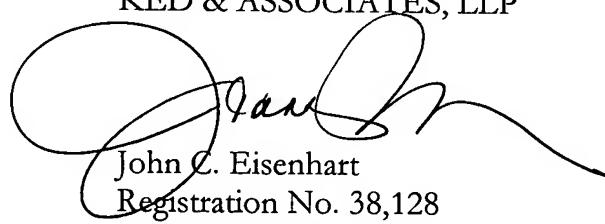
Reply to Office Action of January 31, 2007

V. Conclusion

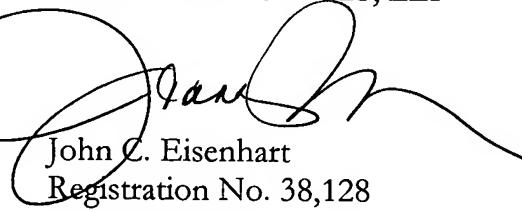
In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned, Joanna K. Mason, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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FIG. 1 Related Art

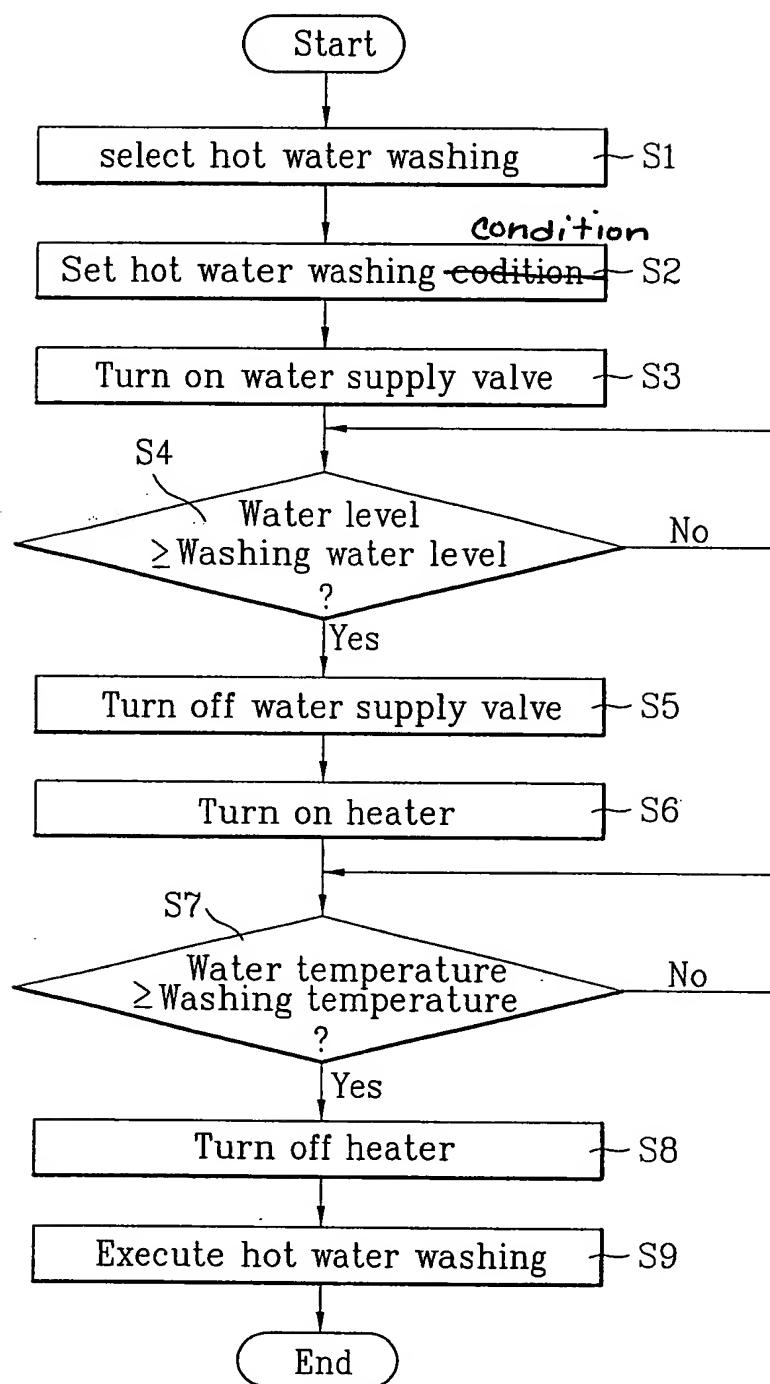


FIG. 3

